AMONG MY AUTOGRAPHS.

By DAVID EUGENE SMITH, Columbia University.

4. MONGE AND THE AMERICAN COLONIES.

A mathematician hearing the name of Gaspard Monge (1746–1818) would naturally and properly connect it with the science of descriptive geometry to which he was the first noteworthy contributor.   The early genius that he showed at Beaune, where he occupied the chair of physics at the age of sixteen, his career as naval minister in the first and second years of the republic, his intimate relations with Napoleon, his noteworthy work in Egypt, his part in founding the École Polytechnique, his continued rise to high estate, and his complete downfall in honors, in health, and in mentality are hardly remembered by the profession in which he attained his greatest renown.

A considerable number of his letters, now in my possession, tell more or less of this story, but there are two official documents in the collection, signed by him, which show some little interest in the new world.   Each was written in January, 1793, at which time he was naval minister under the Revolution.   The first is dated on the seventeenth and is as follows:

State of the employés appointed by order of the Minister plenipotentiary of the French Republic to serve in the United States of America.
        Memorandum.
    One assistant in the works.
    2 master carpenters, constructors on ordinary appointment. . . .
    Supplement to the appointment because of the distance and of the extraordinary service which they have to perform, at the rate of two thousand four hundred livres for each, making 4,800 livres.
    By the decision of January 17, 1793, the Minister has approved of the annual payment, to the two master carpenters who have been chosen by the Ordonnateur (director) of Rochefort, of two thousand four hundred livres apiece, in addition to the ordinary salary which they receive when in port, and which will serve to provide subsistance for their families.
                                                        Pour extrait.
                                                            MONGE.

The other document, dated on the twenty-ninth of the month, refers to the shipments to the French colonies, including the "Colonies-amérique."   It is an official order, beginning "Le Minister of the Navy to the Commissioners of the National Treasury," and is signed by Monge in his ministerial capacity.

The two orders show Monge in quite a different rôle from the one in which he is ordinarily imagined, and each testifies to the relations of France and America in the general period of the great revolutions in the two continents.

5. DESCARTES'S APPRECIATION OF HUYGENS THE ELDER.

After Descartes had served in the wars, part of the time in the army of Maurice, Prince of Orange, and part of the time under Maximilian, Duke of Bavaria, he decided to devote his life to scholarly pursuits.   While with the

troops on the Danube; in 1619, when he was only twenty-three, he was already working on his *Discours de la Méthode*, in an appendix to which his *Géométrie* appeared, and in 1621 he definitely abandoned his military career and started out to see the intellectual world. He visited North Germany, Pomerania, Holstein, and Holland, tried to content himself for a time in his old home in Brittany, and then gave up the attempt and tried Switzerland and Italy. After this he settled for a while in Paris, found it too distracting in spite of the scientific group of which he was a member, and finally, at the age of thirty-two, decided that Holland was the country best suited to the intellectual work that he contemplated. He was thirty-three when, in March 1629, he took up his residence in Amsterdam,[1] and a year later he felt it worth while to enroll as a student at Leyden, probably because his friend Reneri (Renier) had just received an appointment there in philosophy. In 1632 he is known to have been at work on his *Géométrie*, and in April he wrote to Mersenne about it, stating that it was nearly finished although it needed some revision and that he was bothered with the figures.

It is at this period that he wrote to his friend "Monsieur de Willhelme, Counseiller de Mon.ʳ le Prince d Orange," at the Hague, a letter which is now in my collection and which is, indeed, one of the rarest I have. The letter was written a month after the one to Mersenne, above mentioned, and just before going to Deventer where he expected to finish his *Dioptrique*.

The letter is as follows:

Monsieur,
    I have received the contents of the bill of exchange which you were so good as to send to me, and I thank you for it. I should have kept it a little longer so as to attempt to remit it to you with some profit, but I do not doubt that it will profit more by being in your hands than it will by remaining in mine, and I am now on the point of leaving here. I do not know how to respond to the courtesy of Monsieur Huguens, except that I cherish the honor of his acquaintance as one of the greatest pieces of fortune that has come to me, and I shall never be where I have the opportunity of seeing him without seeking to do so. Just as I shall ever seek the occasion to prove this fact, I am,
       Monsieur, Your very humble and very affectionate servant,
                           DESCARTES.
AMSTERDAM, May 23, 1632.

This Huygens was Constantin, of Zuylichem, the father of Christian Huygens the celebrated physicist. Constantin was the brother-in-law of Willhelme (to take Descartes's spelling), and Descartes had met him through Jacob Golius, professor of mathematics at Leyden, and had formed a warm friendship with him and his talented wife Constance. He seems to have read the proofs of the first edition of the *Discours de la Méthode*, and for many years

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[1] On October 16, 1920, a tablet was placed on the house in Amsterdam where Descartes lived in 1634. It bears the inscription: "Dans cette maison, habita le célèbre philosophe français, René Descartes. A sa glorieuse mémoire cette plaque a été consacrée par l'Alliance française des Pays Bas," and also the following phrase extracted from the correspondence of the philosopher: "Quel autre pays où l'on puisse jouir d'une liberté si entière?" See also, elsewhere in this issue of the MONTHLY, page 179, in connection with the contents of *Revue générale des Sciences.*—EDITOR.

he and Descartes carried on an intimate correspondence, each being a great admirer of the other. Little, however, could either have guessed that Christian, then only a child of three, would one day far outrank his father and would, in point of mathematical ability, rival his father's distinguished friend.

QUESTIONS AND DISCUSSIONS.

EDITED BY W. A. HURWITZ, Cornell University, Ithaca, N. Y.

DISCUSSIONS.

To a question raised by the editor in connection with Professor Light's "Note on curves whose evolutes are similar curves" [*1920*, 303], as to the existence of other curves possessing the stated property, an answer is given below by Mr. Franklin, who derives in a simple way the result, stated by Puiseux, that an infinite set of such curves exists. A rather interesting incidental feature is found at the end of the paper, in the construction of a sort of geometrical "sum" of two curves as the locus of the sum (as determined by vectors starting at the origin) of points on the two curves at which tangents are parallel. The especial interest lies in the fact that exactly this process of composition of curves has been mentioned recently in an entirely different connection by Professor W. B. Carver[1]; the curves to which he applies the process are algebraic, while those of Mr. Franklin are transcendental.

Proofs of the law of tangents in plane trigonometry have been given recently by Cheney [*1920*, 53], Lovitt [*1920*, 465] and Epperson [*1921*, 71]. In a letter to the editor, from which an extract is printed, Professor Mathews calls attention to various other proofs of the law. It is clear, as Professor Mathews states, that other new proofs can be devised in considerable number from a suitable figure; it therefore seems desirable to bar consideration of further proofs, unless they involve new principles.

As the third discussion, we print a note on the nature of expository papers for presentation to the Association.

I. ON CURVES WHOSE EVOLUTES ARE SIMILAR CURVES.

BY PHILIP FRANKLIN, Princeton University.

In the July–September number of the MONTHLY [*1920*, 303] there appeared a discussion of curves whose evolutes are similar to themselves, by Professor Light. He found that the only curves having this property and having their intrinsic equations of the special type $AR^n + BS^m + C = 0$ were the logarithmic spiral and the cycloidal curves. The editor inquired whether any other curves possessed this property.

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[1] "The failure of the Clifford chain," *American Journal of Mathematics*, vol. 42 (1920), p. 167.